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COVER PHOTO: RICHARD CHESNUT

Distributor Computerization Takes Giant Step

According to a study just completed by Management News *magazine and National Paper Trade Association, paper and plastics distributors have grown significantly in the use of computerization and technology in their daily operations.*

By William H. Frohlich, Publisher, Management News

Ninety-seven percent of the paper and plastics distribution industry is computerized—at least to some extent. This, according to the results of the MN/NPTA study of industry computerization and technology usage, reveals a great increase in the level at which companies use computer systems in their businesses. Fifteen percent have been computerized for two to five years, the rest longer.

The "Computerization and Technology" study was conducted by *MN* and NPTA staff with the help of the consulting firms of Computer Solutions, Inc., of Rochester, NY, and Healy and Associates, Naples, FL. Survey forms were sent to a sample of 565 paper and plastics distribution company headquarters in July of this year. Of those companies sent forms, 180 usable responses were received—a 32% response rate. This significant response shows the interest in the subject and that the results are projectable to all paper and plastics distribution companies.

Survey Respondents

Approximately one-third of those responding to the MN/NPTA survey were presidents or CEOs of their companies, one-third were the head of computer operations, CFOs and CIOs, and the last third were "others." Half of those responding work for companies with less than 50 employees.

Printing paper merchants made up 18% of those responding to the survey, 54% were industrial paper and plastics distribution firms, with the rest being duals.

By size, 60% were companies with less than $25 million in annual sales; the rest had more.

Nearly two out of three of those responding represented companies with "no branches" or "one branch." Not surprisingly, this was swayed by the small industrial houses—41% of which had one branch or less. Half of all respondents had two or less people in their computer operation.

What They Have/Spend

The MN/NPTA survey first sought to find out what distributors currently have installed in their operations. The survey revealed that, on average, company headquarters have 20 computer terminals in their operations. Companies with branches averaged a total of 48 addition-

MN/NPTA Technology Survey
Expected Usage of Bar Coding & EDI Within 2-5 YRS

	COMPANY BUSINESS			LAST YEAR'S SALES			TOTAL
	PRINTING PAPER	INDUST.PAPER -PLAST	DUAL	<$10 MILL	$10-50 MILL	>$50 MILL	
BAR--WAREHOUSE BINS	70.0	61.1	62.5	51.6	69.0	70.2	62.9
BAR--ALL WAREHOUSE	73.3	61.1	72.9	51.6	74.1	74.5	65.9
BAR--BY SUPPLIER	56.7	53.3	62.5	38.7	63.8	68.1	55.7
BAR--FOR CUSTOMERS	53.3	48.9	58.3	41.9	55.2	61.7	52.1
EDI--FROM SUPPLIER	46.7	64.4	41.7	45.2	69.0	48.9	54.5
EDI--BY CUSTOMERS	46.7	51.1	31.3	46.8	46.6	38.3	44.3
EDI--FREE-STAND.PC	13.3	25.6	14.6	24.2	25.9	8.5	20.4
EDI--MAIN SYSTEM	56.7	43.3	45.8	41.9	48.3	51.1	46.7
EDI--DEDICATED LINES	16.7	21.1	18.8	14.5	29.3	14.9	19.8
EDI--3RD PARTY	26.7	27.8	25.0	17.7	37.9	23.4	26.3

al computer terminals outside of the corporate headquarters.

When asked their annual expenditures on all computer hardware and software, those surveyed revealed that about one out of three companies spent less than $10,000 each year, another one out of three spent between $10,000 and $50,000, and the rest, more. Significantly, about one out of five said they spend more than $100,000 per year. Most of this group, of course, were companies with over $50 million in sales.

The computer department operating expenses must also be factored in. The study found that about one in four spend less than $25,000 per year to operate their computer departments, 30% spent between $25,000 and $100,000 each year, with the rest spending more.

The study also looked at these issues by type of business to see if there were significant differences. As one might expect, half of the industrial distributors spend less than $10,000 each year on computer hardware and software and half spend under $25,000 per year on operating their computer departments. Certainly, this is due to company size. Also as expected, one-third of the duals spent over $100,000 on computer hardware and software, with half of them spending over $50,000 each year to operate their departments.

When asked how they divide their total expenditures on all technology among core areas, the survey revealed that 40% of all monies spent go for hardware, systems, and hardware upgrades; 36% was spent on software-related items; 6% on communications, networks and LANs, and 18% on personnel expenses.

Determining what distributors spend on all computerization and technology as a percentage of sales is not as easy as it sounds. In 1986, as part of the technology study conducted for NPTA by Arthur Andersen and Co., paper and plastics distributors revealed that they were spending, on average, about one-half of one percent of sales on all technology expenses. The Arthur Andersen research also showed that the average for all wholesale distribution (throughout all commodity lines) was about 1.5% of sales. This led to the conclusion that paper and plastics distributors had a lot of catching up to do.

Now five years later, paper and plastics merchants have shown that they are catching up. Printing paper merchants reported spending, on average, 1.3% of sales on all computer expenses; industrial distributors spent 1.26%, and duals, 1.14%. This is a significant change and indicates that merchants in this business are overcoming their slow start in the computerization of their operations, and that they are more focused on technology as a means to improve their operating efficiency.

Training the people involved in all aspects of the use of new technology is key. Respondents to the MN/NPTA survey

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showed that this area of training has become a growing part of their overall training budgets. One out of four of those responding are currently spending less than 5% of their training budget on technology training, nearly half are spending 5 - 15%, and about 1/3 spend over 15%.

System Usage

The survey revealed that paper and plastics distributors use multiple systems to accomplish their daily computer tasks. *MN* wanted to know what systems are in active use. (Because many merchants use more than one type of system, their responses add up to more than 100%.)

- The following shows what is currently being used:
  - Main Frame Systems, 31.5%
  - Mini Computer Systems, 54.8%
  - LANs, 10.1%
  - PCs, 61.3%
  - Lap-Tops and Portables, 16.1%
  - Workstations, 16.1%

In general, the larger companies were more heavily invested in most systems than the smaller companies, with the exception of "workstations," which were being used more heavily by the smaller companies.

As an example, the NPTA headquarters office, uses a mini computer system, a LAN, PCs, and two workstations.

Computer On-Line Linkages

MN wanted to know what kind of on-line linkages were in existence between distributors and suppliers and customers. Furthermore, it was desirable to find out if distributors planned to create more computer linkages in the future. Obviously, the larger companies had more linkages than the small companies, and the printing and duals had more than the industrial distributors with their suppliers, but the issue was being addressed by all distributors.

Currently, printing paper distributors are on-line with an average of 2.6 suppliers and 3.0 customers. Industrial distributors are on-line with 1.5 suppliers and 3.7 customers. Dual distributors are currently on-line with 4.3 suppliers and 6.4 customers.

When asked about the future, distributors seem confident that their growth in computer linkages will be exponential. On average, linkages with suppliers and customers are expected to grow by seven fold. The greatest growth is expected to be among industrial paper and plastics distributors and their on-line linkages with their customers in the next five years. They expect this to increase by 60 times! (For more on future prospects, see a later section.)

Bar Coding and EDI

No area of technology usage is hotter than bar coding and Electronic Data Interchange. The MN/NPTA research of the industry shows, though, that there is a lot more talk than action. Paper and plastics distributors were asked what ways they were using bar coding and EDI, if at all. Electronic Data Interchange (EDI) is much more widespread in its application than bar coding at this time, and larger distributors are more active in both areas than any others.

This table is an important one. First, it shows the differences between the types of distributors and company activity by size. Next, notice that the EDI interface level between distributors and suppliers for industrial paper and plastics merchants (2.2%) is far below that of the printing paper merchants (23.3%).

Then, note that the industrial distributors are far more active in EDI with customer linkages (26.7%). Smaller distributors, with sales of under $10 million, are very far behind the largest companies by a great deal. This represents a competitive disadvantage for the small merchants.

The prior Arthur Andersen research of the industry five years ago predicted that the smaller merchant could compete with the large companies if they increased their investment in technology. This is still true, but the smaller distributors do not seem to be taking up the challenge.

Satisfaction With Their Systems

One thing that the MN/NPTA survey wanted to uncover was the industry's degree of satisfaction with its computer technology. Survey respondents were asked to judge their own systems on a scale of one to 10, with 10 indicating the highest degree of satisfaction. Paper and plastics distributors gave an average rating of 7.5 when asked for their degree of satisfaction with their software systems. This is certainly positive and one would be safe in saying that they are "very satisfied."

The quality of their software vendor's update service was also judged by survey respondents. This received a slightly lower score of 6.8, but still showed a positive attitude. Their satisfaction with the training provided by their vendors was lukewarm—5.9.

Industry people were also asked to rate their satisfaction with specific software applications.

The following shows their ratings, again on a scale of one to 10:

- Warehousing Software, 7.2
- Truck Scheduling, 6.6
- Price Book Software, 7.2
- Software to Produce Catalogs, 6.8

In general, industrial paper and plastics distributors were happier than their printing paper and dual merchant counterparts.

Types of Equipment Used

Paper and plastics distributors were asked to name the type of hardware used in their operations. When asked to identify their mainframe or minicomputer system used, 41% of those responding identified IBM equipment. Qantel was next, with 12%, and Hewlett Packard, with 8%. Wang and NCR each had 6%, and Basic 4 had 5%. The rest were spread among (in no particular order) Data General, Prime, Unisys, Datapoint, Toshiba, Compaq, and others. For those using Local Area Networks (LANs), and there were only 7% of the distributors surveyed who said they had LANs, the most often mentioned equipment was Novell and IBM, which made up half of those responding.

PC usage showed a great variety of types of equipment, as one might expect. Most all of those were of the IBM type as opposed to Apple. The most popular were the real IBMs, with 70% of the paper and plastics distributor market.

Compaq was next, with 9%, followed by a great assortment of other names with smaller numbers.

Laptops are being used by a little over 12% of paper and plastics merchant companies. The most often cited makes were: Toshiba, with one out of three; Compaq, HP and Zenith with another third, and the rest, spread across a variety of 0ther units.

Workstations are currently being used by about 11% of those surveyed. IBM, Macintosh, and others make up the list.

Software Vendors Used by the Industry

Although the sample in this survey is significant, not every paper and plastics merchant in the industry answered. This means that the percentage of those using a certain software may not truly reflect the whole industry. (For a better understanding, contact each vendor and ask how many placements each has in this industry.)

The thing that may be surprising to some is that there are a great many software systems out there. One out of three of all responses identified a different supplier. In other words, it is highly unlikely that anyone else is using the same software that you are using. The most frequently identified vendor was CPI, with 13.4% of those responding. Next was Stanpak, with 11.3%, and Maytech, with 5.2%. After that were Distribution Resources, with 4.1%, and Cambar, with 3.1%. The rest were in the one to two percent range.

System Strengths

MN asked those surveyed to report what they liked most about their particular computer system. To summarize, one out of four of those responding said it was the order entry system that was the strongest part of their system. The percentages of responses identifying the strongest functions of their systems were:

- Order entry, 24.5
- Inventory control, 13.3
- User friendly/Menu driven, 11.9
- On-line/Integrated, 11.9
- Sales/Customer analysis, 10.5
- Customer item inquiry, 7.7
- Billing/Invoices, 7
- Accounts/General ledger, 7.0
- Pricing, 5.6

System Weaknesses

The weakness of any system may be something that is extremely important to the daily functioning of the paper merchant operation, or it may be relatively unimportant. The MN/NPTA survey did not ask how important the system weakness was to the company.

Nonetheless, the percentages of responses identifying the weakest functions of their systems were:

- Analysis/Reports/Spreadsheets, 15.2
- More Comprehensive/Integrated, 10.4
- Flexibility, 8
- Inventory Control, 8
- Changes/Updates, 7.2
- General Ledger/Accounting, 7.2
- More User Friendly, 6.4
- Response Time/Access Speed, 5.6
- Purchasing/Accounts Payable, 5.6
- Ordering, 4.8
- Documentation, 4.8
- Database/System Orientation, 4.0

Functions Computerized

MN wanted to find out how prevalent certain computerized functions were in the paper and plastics distribution industry. The following shows the complete list as derived from the research (by percentages):

ACCOUNTING FUNCTIONS

- On-line Accounts Receivable, 94.6
- On-line Billing, 94.0
- On-line Accounts Payable, 87.4
- On-line General Ledger, 80.2
- On-line Purchasing, 80.8
- Financial reporting, 78.4
- Payroll, 44.3
- Fixed Asset Records, 43.7
- Financial Modeling, 24.0
- Budgeting, 47.9
- Electronic Billing, 12.6
- Purchasing Management, 68.3

OPERATIONS

- On-line Inventory Control, 88.0
- Vendor Preference Analysis, 52.7
- Cycle Counting, 46.1
- Inventory Analysis Reporting, 83.2
- Electronic Voice Mail, 21.6
- Warehouse Management, 39.5
- Automated Warehouse, Storage/Retrieval, 14.4
- Telemarketing/Prospecting, 28.1
- Word Processing, 66.5
- mail Merge/Labels, 54.5
- Time/territory Management, 12.6
- Automated Freight Analysis, 9.6
- DOT Hazardous Material Information, 35.3

MANAGEMENT SYSTEMS

- Executive Information Support System, 40.7
- Strategic Modeling/Planning, 10.8
- Human Resources Records, 24.0
- Customer Service Preference Reports, 33.5
- Customer Service Records, 46.7
- Account Database Management, 47.3
- Customer Profitability Analysis, 77.8
- Product Line Profitability Analysis, 67.7

(Continued on page 31)

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New Book Guides Distributors Through 'The Technology Maze'

"The Technology Maze" points the way through the tough, important issues surrounding technology and its use—today and tomorrow.

Just how important is technology, strategically and operationally, to the distributor of the future?

What benefits, proved and potential, might a distributor realize from various state-of-the-art technologies?

Why does technology work for some distributors and not for others?

What impact does technology have on a distributor's strategic planning, organization structure, and people?

Why does the wholesale distribution industry lag others in technology use and investment?

Now, a new book from Arthur Andersen, "The Technology Maze," guides distributors through the tough, important issues surrounding technology and its use in the industry—today and tomorrow.

"The Technology Maze" began as a desire to help distributors grasp the Why's, What's, and How's of technology.

Under the sponsorship of the National Association of Wholesaler-Distributors' Distribution Research & Education Foundation, Arthur Andersen surveyed more than 470 industry experts. The result is a clear, concise, and comprehensive study that shows wholesale-distributors how to:

- Overcome biases that keep them from using technology to its fullest potential.
- Evaluate the potential of state-of-the-market applications.
- Consider the organizational changes required to become a "distributor of the future."
- Find opportunities, function by function, for enhancing and improving the use of technology for business advantage.
- Determine which technologies are most applicable for their own companies and businesses.
- Appreciate the complex "people" issues surrounding technology and how specific management techniques can defuse resistance to change.

"The Technology Maze" does more than inform; it also instructs in a wide range of areas.

While the book pinpoints problems the industry has had in applying technology aggressively, it also provides solutions that each distributor can use in the business: practical techniques and tools for analysis, planning, and management, as well as case studies and examples of "best practices."

"The Technology Maze" is available for $90 from NPTA, 111 Great Neck Road, Great Neck NY 11021. MN

Distributor Computerization

(Continued from page 21)

- Customer Contacts, 49.7
- Sales Analysis, 93.4
- Sales Forecasting, 32.9

The Future

Paper and Plastics distributors were asked about their next steps in upgrading their computerization and technology within their operations. It was no surprise to find that bar coding and EDI made up over half of the responses. General upgrading of hardware and software made up nearly another quarter of the responses, and the rest were scattered across a great number of specific items.

When asked specifically about their plans for EDI and bar coding in the next two to five years, distributors reported that they will be very active. Approximately two out of three said that they wanted to add bar coding to their warehouse bins specifically, and generally throughout their warehouse operation. A little more than half said that they expected to have supplier bar codes on the goods they receive and expected to bar code for their customers.

Half of those responding expected to be on-line with their suppliers that they are not currently hooked up with, and almost half expected to be on-line with customers.

When identifying the problem areas in their technology and its implementation within their companies, one out of four distributors said that inventory control and management would be critical. Also identified as important were warehouse management, customer service, system integration, sales/profit analysis, operations productivity, pricing, and delivery/routing.

All were asked what NPTA should be doing in the technology arena to help member firms achieve their goals. Twenty percent reported that they need to be kept informed of technology trends. Another 17.4% said that they would like to have standardized bar coding (which has been accomplished on the industrial paper and plastics side by NPTA), and 15.1% reported the need for seminars and meetings on technological subjects. MN